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### Exploration and Practice of University Students' Innovation and Entrepreneurship Training Mode Based on Project Management

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Abstract. Innovation and entrepreneurship are no longer optional luxury items, but have become a necessity for the survival of contemporary youth. Innovation has become a decisive factor in economic and social development and a core manifestation of international competitiveness. Since the Party's 18th National Congress, China has made it clear that it will cultivate students' spirit of innovation as an intensive development direction of higher education. Strengthening the education of college students in innovation and entrepreneurship, training the high-quality talents with innovative consciousness and innovative ability are of great strategic importance in promoting the reform and development of higher education and promoting the construction of an innovative country. This paper studies the management of engineering projects and the new mode of innovation and entrepreneurship for undergraduates, and proposes a reasonable project management cooperation. The platform also proposed mid-term inspection and project acceptance management measures to provide reference for further standardizing and strengthening computer engineering innovation and entrepreneurship training in local universities.

#### Introduction

The innovation and entrepreneurship training program for undergraduates is an important component of the undergraduate teaching quality and reform project in universities. It is directly oriented to the implementation of undergraduate students. It aims to promote the transformation of higher education ideas in education, reform personnel training models, strengthen innovation and entrepreneurship training, and enhance the innovation of college students' entrepreneurial ability. Also, we should train high-level innovative talents to meet the needs of building an innovative country based on innovation.

Over the years, China's computer engineering professional education has taken into consideration the requirements of "generous" and "exquisite specialization", attached great importance to the theoretical basis, adhered to rigorous training. However, like other engineering majors, computer engineering education generally lacks innovation and practicality. The lack of fostering innovative talents has become a bottleneck that restricts the further development of economic construction. Under the new situation, this paper starts from the perspective of China's basic national policy and national conditions, and studies the necessity of colleges and universities to vigorously carry out training for college students' innovation and entrepreneurship projects. Proposing to create a reasonable innovation platform for engineering project management and a collaborative platform for school-enterprise cooperation will actively guide and promote the enthusiasm of college students in investing in innovation and entrepreneurship training. It has been proved that the results are remarkable and advanced, mature and applicable, and are similar to local colleges and universities. The professional innovation and entrepreneurship training of engineering majors will play a valuable role.



# Combination of Innovation, Entrepreneurship Education and Engineering Project Management

**Guiding Ideology**. Guided by the concept of scientific development, we will build a platform for high-quality, multi-level innovation and entrepreneurship training, give full play to the advantages of local agricultural institutions, and integrate innovation and entrepreneurship education into professional education. The construction of this model is based on the transformation of traditional education concepts and the concept of updating education as the guiding ideology. It focuses on cultivating college students' innovative spirit, entrepreneurial awareness, and entrepreneurial ability. It fully advocates teachers and students to enhance their awareness of innovative experiments and entrepreneurial practice activities to cultivate high-quality, comprehensive and innovative talents that are suitable for the development and construction needs of engineering projects.

**Positioning.** Closely centering on the school's orientation and development strategy, strengthening the characteristics of running schools, vigorously promoting the spirit of "two real and two creations", and building through the school's scientific research platforms, practical teaching bases, social service platforms, employment bases, and board of directors, etc. The "Innovation and Entrepreneurial Work System" of "teaching, practice, incubation, and service" promotes the reform of the curriculum system of the talent cultivation model and the innovation and entrepreneurship education in schools, and continuously improves the quality of personnel training.

**Professional Features.** The specialty is characterized by wideness and communication, It is embodied in the theoretical foundation and professional technical foundation of paying attention to mathematics, logic, data structure, algorithm, electronic design, computer architecture and system software. Graduates are required to have good basic knowledge and expertise in addition to the necessary basic knowledge and expertise. The scientific literacy and humanistic qualities, strong organizational judgment ability, certain innovation ability, and good cooperation spirit. Through basic teaching and professional training, we can cultivate high-level talents with solid basic knowledge, wide knowledge range, strong engineering practice ability, and a sense of development and innovation, who are engaged in scientific research, education, development and application in the field of computer science and technology.

#### The Necessity of Developing College Students' Innovation and Entrepreneurship Training

The Needs of the Times for Serving an Innovative Society. The core of the 21st century comprehensive national strength competition lies in the competition between science and technology and human resources. The focus of competition is on innovation. Our country proposes to enter the ranks of innovative countries by 2020. In addition, more than 200 fast-growing cities have proposed the development goals of building high-level innovative cities. From the enthusiasm of "mass entrepreneurship and innovation" to the new trend of "everyone's innovation." Innovation has become the main theme of social development, and innovative society is an inevitable trend of development. General Secretary Xi Jinping stressed: "Our country is a big developing country and we must implement innovation-driven development strategies. Innovation-driven technology is essentially talent-driven. In order to speed up the formation of a large-scale, creative, and risk-taking team of innovative talents, we must focus on making good use of, attracting, and nurturing efforts." Therefore, cultivating undergraduates with innovative consciousness, innovative thinking, and innovative ability provide a valuable talent pool for innovation-driven development strategies. This is an inevitable requirement for building an innovative society.

Serving the Inner Needs of Innovative Universities. The development of the times gives universities higher missions and responsibilities. Higher education should not be purely professional education. Instead, it should improve the teaching system of the course and strengthen the guidance of practical teaching to gradually cultivate the college students' sense of innovation and their thinking, and thus enhance the ability to innovate. The goal of the training of engineering talents in colleges and universities is to transform from cultivating qualified engineering and



technical talents, cultivating highly-developed and highly qualified engineering and technical personnel to cultivating high-level innovative talents with innovative consciousness. Professor Li Jian, former party secretary of Zhong Nan University, once proposed the idea of building an innovative university and provided new ideas for the leap-forward development of universities. Talent cultivation is the central task of higher education, and the quality of talent training is an important criterion for measuring the level of running a university. Therefore, strengthening the cultivation of innovative talents is the only way for the survival and development of innovative universities.

Serving Employment Needs in Innovative Markets. In recent years, with the popularization of higher education, the enrollment scale of colleges and universities has been continuously expanding, and the corresponding number of graduates has increased significantly. However, the employment market is becoming increasingly saturated and the employment situation is very severe. In this environment, the employment competitiveness of graduates depends on the ability to innovate in practice. On the one hand, improving the ability to innovate has become the goal and task of the company's development, and it is also an important criterion for the company to evaluate talents. Therefore, innovative thinking and innovative ability have become important weights for the graduates' employment competition. On the other hand, with economic restructuring and structural adjustment, self-employment has become another outlet for employment. The entrepreneurial market calls for innovative talents. Launching college students' innovation and entrepreneurial awareness are new requirements put forward by the increasingly fierce talent market.

## Project Management-Based Innovation and Entrepreneurial Training Model for Undergraduates

**Introduce two-way selection mechanism to promote the quality of innovation and entrepreneurship.** Before the project is established, students and teachers can make two-way choices. In this link, on the one hand, students can apply for related projects according to their own professional background and combined with hobbies. On the other hand, teachers can rely on their scientific research projects and research results to propose project applications. The introduction of a two-way selection mechanism and competition mechanism is conducive to students studying topics that they are interested in. It is also beneficial for teachers to develop students with professional expertise in accordance with scientific research needs. At the same time, the school encourages college students to participate in the project at different levels across the project, which, to a certain extent, enables the project to be open and fair.

**Implement comprehensive process monitoring to ensure that the innovative venture project works well.** Since the university students' research on the project is in its infancy, the school has set up mid-term inspections, final acceptance tests, and other links. The assessment experts are required to score the project's development from a professional perspective and give constructive opinions. The project team can recognize the inadequacies of the project research from the valuable opinions of the experts, further improve the works, and lay a solid foundation for follow-up research. In addition, the school has also set up changes in project members and funding declarations, and carried out all-round, scientific and effective management of the "Students' Innovation and Entrepreneurship Training Program". Through transparent, open, and standardized management models, we ensure the healthy operation of the project.

**Establish long-term mechanism to promote long-term development.** The cultivation of innovative talents is a long-term and arduous system project. Therefore, the project of innovation and entrepreneurship training for college students should establish a long-term operation mechanism to promote the sustainable development of higher education reform. Establish incentive incentives. In order to mobilize the enthusiasm of students and instructors, a long-term reward incentive mechanism should be established.

For students: Students are the main players in innovation and they are also the most active factor in innovation projects. Adhere to the "interest-driven" principle of the project, fully mobilize and



give full play to the enthusiasm of students, and students' creative thinking and practical ability training can be implemented. For items that have been rated as excellent for final acceptance, in addition to identifying the corresponding innovation credits, reward certificates can also be awarded and used as an important basis for bonus points when assessing, researching, and awarding scholarships. For instructors: When the project passes the final acceptance test, the corresponding teaching workload is given, for example, according to the workload of directing the two students' thesis. If the guidance project is rated as excellent, the workload given is increased appropriately. As the basic performance of the next guidance project funding level and funding quota, you can also declare the school's excellent teaching achievement award, or as a bonus indicator for promotion of the title.

Do create a creative and entrepreneurial campus culture atmosphere. The campus culture environment is a comprehensive body of various cultural elements such as the accumulation and formation of long-term education and teaching activities of the school and its active role in all teachers and students' value orientation, behavioral norms, school style, and the corresponding system, material and spiritual environment.

**Improve evaluation system and promote project quality assurance.** A comprehensive and multi-perspective evaluation of the effectiveness and problems of the innovation and entrepreneurship training program for undergraduates will help improve and improve the project management system. In the guiding ideology of "advocating active practice and focusing on the research process", we should abandon the traditional evaluation system of "results first" and establish a comprehensive evaluation system that can reflect the students' innovative qualities and innovation capabilities.

To build a sound evaluation system, we must adhere to the combination of outcome evaluation and process evaluation, and closely evaluate the project's quality, progress, and costs to evaluate the effects of the project, subjectivity of evaluation objects, diversification of evaluation indicators, and quantification of evaluation standards. Subject of evaluation. Students are the main participants of the innovation and entrepreneurship training program, and a student-centered subjective evaluation mechanism should be established.

Diversification of evaluation indicators. Establish a complete classification evaluation and grading evaluation system, and implement the diversification of evaluation indicators. Pay attention to differences in project types, such as theoretical research, applied research, and basic research projects. Evaluation methods and evaluation indicators should be differentiated and focused. In addition, the innovation and entrepreneurship training program for undergraduates is divided into national level, school level, and college level, with different project levels, different funding, and evaluation criteria. Furthermore, competitions in various disciplines and extracurricular science and technology works competitions, such as structural model competitions and reinforced earth retaining wall design competitions, may be introduced as auxiliary evaluation indicators.

#### Summary

Colleges and universities are important bases for cultivating talents for innovation and entrepreneurship. And colleges and universities must shoulder the responsibility of conveying high-level talent for the country and society. Launching the innovation and entrepreneurship training program for undergraduates is an inherent requirement and an inevitable trend for the construction of an innovative society, the development of innovative universities, and innovative market competition. The innovation and entrepreneurship training of college students has been highly valued by the national, local, university, and students, and colleges and students have high enthusiasm for applying for innovation and entrepreneurship training programs. This article explains the positioning of engineering projects, and the importance of combining engineering projects with innovation and entrepreneurship. It highlights the innovation and entrepreneurship training model for undergraduates based on engineering project management, with a view to providing reference for innovation and entrepreneurship education in college engineering management.



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